The central activity of the CMIB unit is to develop small molecules to probe and control the biological activities of key targets involved in cancer.

These are mainly non-B nucleic acid structures (Quadruplexes) and Kinases. IR-photoexcitable probes designed both for subcellular tracking and targeted photodamage represents also an important research axis. The drug and probe discovery activity is sustained by Molecular Modelling approaches and Multimodal Imaging (TEM, NanoSIMS, IRM). The CMIB unit is hosting the Institut Curie-CNRS proprietary library comprised of over 9000 chemical compounds and the preclinical IRM imaging and chemical imaging facilities.

The main research themes of the unit include:

- G-quadruplex targeting agents
- DNA targeted fluorescent dyes
- Kinase inhibitors
- Photo and radiosensitizers for Retinoblastoma and Glioblastoma therapy.
- Medicinal chemistry (Hit to lead optimization, building of focused libraries)
- Molecular dynamics and virtual screening
- Multimodal imaging for 2D and 3D chemical mapping
- Development of software and Image acquisition, processing and analysis
Key publications

Year of publication 2018

Annalisa Patriarca, Charles Fouillade, Michel Auger, Frédéric Martin, Frédéric Pouzoulet, Catherine Nauraye, Sophie Heinrich, Vincent Favaudon, Samuel Meyroneinc, Rémi Dendale, Alejandro Mazal, Philip Poortmans, Pierre Verrelle, Ludovic De Marzi (2018 Nov 1)

**Experimental set-up for FLASH proton irradiation of small animals using a clinical system**


Hee-Sheung Lee, Mar Carmena, Mikhail Liskovykh, Emma Peat, Jung-Hyun Kim, Mitsuo Oshimura, Hiroshi Masumoto, Marie-Paule Teulade-Fichou, Yves Pommier, William C Earnshaw, Vladimir Larionov, Natalay Kouprina (2018 Nov 1)

**Systematic Analysis of Compounds Specifically Targeting Telomeres and Telomerase for Clinical Implications in Cancer Therapy.**

*Cancer research* : 78 : 6282-6296 : [DOI](10.1158/0008-5472.CAN-18-0894)

Abhijit Saha, Sophie Bombard, Anton Granzhan, Marie-Paule Teulade-Fichou (2018 Oct 27)

**Probing of G-Quadruplex Structures via Ligand-Sensitized Photochemical Reactions in BrU-Substituted DNA.**

*Scientific reports* : 8 : 15814 : [DOI](10.1038/s41598-018-34141-z)


**Design, synthesis, biological evaluation and cellular imaging of imidazo[4,5-b]pyridine derivatives as potent and selective TAM inhibitors.**


Eloïse Bertiaux, Adeline Mallet, Cécile Fort, Thierry Blisnick, Serge Bonnefoy, Jamin Jung, Moara Lemos, Sergio Marco, Sue Vaughan, Sylvain Trépout, Jean-Yves Tinevez, Philippe Bastin (2018 Oct 3)

**Bidirectional intraflagellar transport is restricted to two sets of microtubule doublets in the trypanosome flagellum.**

*The Journal of cell biology* : On line : [DOI](10.1083/jcb.201805030)

Philippe Robert, Thomas Frenzel, Cécile Factor, Gregor Jost, Marlène Rasschaert, Gunnar Schuetz, Nathalie Fretellier, Janina Boyken, Jean-Marc Idée, Hubertus Pietsch (2018 Sep 1)